

# APPENDIX "C"

## CARLSBAD MUNICIPAL WATER DISTRICT'S APPROVED MATERIALS LIST FOR USE ON CONSTRUCTION OF POTABLE AND RECYCLED WATER FACILITIES

| Item   | Description  | Manufacturer/Model   |
|--|--|--|
| AIR/VACUUM VALVE<br>2-INCH                   |  | APCO 145C<br>VAL MATIC 202<br>CRISPIN UL20<br>Vent-O-Mat Model 050RBX4021  |
| AIR/VACUUM VALVE<br>ABOVE GRADE<br>ENCLOSURE | Air-Vacuum Valve Assembly. See Standard Dwg W7<br>See "Valve Box" for below grade components   | Pipeline Products VCAS 1830 Tan  |
| ANGLE METER STOPS<br>1-INCH                  | 1" Bronze Angle Meter Stop (Ball Valve) with 90 Degree Lock<br>Wing, Flare x Outlet Swivel Meter Nut   | Ford BA23-444W<br>Jones J1964W<br>Mueller B-24255  |
| ANGLE METER STOPS<br>2-INCH                  | 2" Bronze Angle Meter Stop (Ball Valve) with 90 Degree Lock<br>Wing, Flare x Outlet Meter Flange   | Ford BFA23-777W<br>Jones J1973W<br>Mueller B-24277   |
| BACKFLOW<br>PREVENTER (R.P.)                 | Reduced Pressure Principal Type Assemblies; Double Check<br>Valve Detector Assemblies for Fire Sprinkler Systems   | List of Approved Backflow Prevention<br>Assemblies by the State of California,<br>Department of Health Services most<br>recent version |
| CORPORATION STOP,<br>FLARE X MIP             | Bronze Flare x MIP Thread Ball Valve (T-Head only) 1" and 2" Full<br>Opening   | Ford FB700, Jones 1929, Mueller<br>B-25025   |
| CORPORATION STOP,<br>MIP X MIP               | Bronze MIP x MIP Thread Ball Valve (T-Head only), 1" and 2" Full<br>Opening  | Ford FB500,<br>Jones J-1943<br>Mueller B-2969 (2")<br>Mueller B-20013 (1")   |
| BOLTS AND NUTS, 304<br>SS                    | Hex-Head Machine, ASTM A193, Grade B8 Bolts and ASTM A194,<br>Grade 8 Nuts   |  |
| BOLTS AND NUTS, 316<br>SS                    | Hex-Head Machine, ASTM A193, Grade B8M Bolts and ASTM<br>A194, Grade 8M Nuts   |  |
| BOLTS AND NUTS,<br>A307                      | Hex-Head Machine, Cadmium/Zinc Plated, ASTM A307, Grade A<br>Bolts and A307 2H Heavy Hex Nuts  |  |
| BONDING AGENT,<br>EPOXY                      | Epoxy Resin Based Bonding Agent for Bonding New Mortar or<br>Concrete to existing concrete   | Sika Sikadur 32 Hi-Mod   |
| BUSHING, INSULATING                          | Nylon, 1-1/4" x 1",<br>1-1/2" x 1", 2-1/2" x 2"  | Calpico<br>Corrosion Control Products<br>F.H.Mahoney   |
| CASING END SEAL                              | 1/4" Thick Styrene Butadiene Rubber Sheet End Seal. Use 1"<br>Wide Stainless Steel Bands. Zippered End Seals with Stainless<br>Steel Bands may also be used.   | Advanced Products & Sys.<br>Cascade<br>Calpico<br>Pipeline Seal & Insulator<br>Powerseal<br>Raychem                                    |
| CASING SPACER                                | Stainless Steel Casing Spacer, Center Restrained, Position Type<br>with PVC Liner and Non-metallic Anti-friction Runners   | Advanced Products & Sys.<br>Cascade<br>Calpico<br>Pipeline Seal & Insulator<br>Powerseal<br>Raychem                                    |
| CATHODIC TEST<br>STATION BOX                 | 25.4 Kg (54 lbs) Concrete Body with 5.4 Kg (12 lb) Ductile Iron Lid<br>and Lid Ring. "CP TEST" shall be cast into the Lid in 25mm (1")<br>Letters. For Cathodic Protection Test Stations, Anode Ground<br>Beds and Insulated Flange Test Stations. | Christy G5   |
| CATHODIC WELDING<br>CHLORINE                 | For Welding Cathodic Bond Wires to Steel Pipelines<br>Liquid (Gas) or Sodium Hypochlorite Solution. See Section 15040  |  |
| COATING, MASTIC                              | Cold applied Coal Tar or Epoxy based single component, self-<br>priming, heavy-duty protective exterior coating for buried concrete  | Carboline Bitumastic 50<br>Devoe Devtar 5A<br>Polykem 938<br>Tnemec HB Tnemecol<br>46-465, HB Tnemec-Tar<br>46H-413                    |

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| COATING, WATERPROOF                               | Epoxy Resin Based Cementitious Trowel Grade protective waterproofing for concrete   | Sika Top Seal 107<br>STO CR 241  |
| COUPLING, C900 PVC DEFLECTION                     | 4" through 12" Solid PVC for obtaining deflection only.   | Certainteed Vinyl Iron HD  |
| COUPLING, C900 PVC CLOSURE OR REPAIR              | 4" through 12" Solid PVC for closure or repair  | Certainteed Vinyl Iron HD  |
| COUPLING, C905 PVC CLOSURE, DEFLECTION OR REPAIR  | 16" through 36" Solid PVC for Closure, Deflection or Repair   | IPEX<br>Nyloplast America<br>Septer  |
| COUPLING, GROOVED                                 | Use for Above Ground DI or Steel Pipe 100mm (4") or larger  | Grinnell #7001<br>Tyler 500<br>Vitaualic #44, #77  |
| COUPLING, STRAIGHT FLEXIBLE                       | 4" and Larger Steel or Ductile Iron Construction, Slip x Slip, Epoxy Coated with 304 or 316 Stainless Steel Bolts and Nuts. For use on AC, PVC, DI, or Steel Pipe   | APAC 301<br>Ford FC1<br>Powerseal 3501, 3538<br>Romac 501<br>Smith-Blair 411                                   |
| COUPLING, TRANSITION FLEXIBLE                     | 4" and Larger, Steel or Ductile Iron Construction, Slip x Slip, Epoxy Coated with 304 or 316 Stainless Steel Bolts and Nuts. For use on AC PVC, DI or Steel Pipe  | APAC 311, 313<br>Baker<br>Ford FC2A<br>Powerseal 3501, 3538<br>Romac 501<br>Smith-Blair 413<br>Mueller Maxifit |
| CUSTOMER SIDE SHUT-OFF VALVE                      | 3/4" and 1" Bronze Customer Shut-off (Ball Valve), Inlet Swivel Meter Nut x Outlet FIP Thread, Lockable Tabs, with Lever Handle   | Ford B13-332W w/HT34<br>B13-444W w/HT34<br>Jones J-1908W<br>Mueller B-24351                                    |
| CUSTOMER SIDE SHUT-OFF VALVE                      | 2" Bronze Customer Shut-off (Ball Valve), Inlet Meter Flange x Outlet FIP Thread, Lockable Tabs, with Lever Handle  | BF13-777W w/HB-67S<br>Jones J-1913W<br>Mueller B-24337   |
| ELL, BURY, DUCTILE IRON                           | 6" Ductile Iron Bury Ells, Long Radius, Flg x MJ/PO (Use of Short Radius Bury Ells with District Engineer Approval Only)  | Clow<br>South Bay Foundry  |
| EPOXY ADHESIVE                                    | High-Modulus, Low Viscosity, Epoxy Resin Based Adhesive suitable for Grouting Bolts or Dowels   | Sika Sikadur 31, Sikadur 35  |
| EXPANSION JOINT                                   | For Water Pipeline Bridge Crossings   | APAC 703<br>Dresser 63<br>Powrseal 3563<br>Smith-Blair 611, 612  |
| FIRE HYDRANT SPOOL, DUCTILE OR CAST IRON, FLANGED | Ductile or Cast Iron Spool with Integrally Cast Flanges and Machined or Cast Exterior Grooves. Spools 12" or longer shall have grooves 3" from each Flange. Spools shorter than 2" shall have one groove centered between the Flanges. Grooves shall be 3/16" deep, $\pm 1/16$ " and 1/4" wide, $\pm 1/16$ ", 6 Holed |  |
| FIRE HYDRANT                                      | 6" Standard 150 PSI Wet Barrel Bronze Fire Hydrants with Six-Hole Bolt Pattern. 4" x 2.5" or 4" x 4" x 2.5" Outlets   | Clow 2050, 2065<br>Jones J3700, J3775  |
| FIRE HYDRANT, 200 PSI or Higher                   | Project Specification Submittal Required  |  |
| FITTING, DUCTILE IRON                             | Flanged, Mechanical, Joint or Push-on Tees, Bends, Crosses, Recucers, Adapters, etc., for Water Lines 4" and larger. Manufactured per AWWA C100, C111, C153. Double Cement Mortar Lined. (SSB Fittings will not be permitted on C905 Pipe.)   | Bachman<br>Griffin<br>Nappco/Sigma<br>Pipeline Components<br>Star<br>Tyler                                     |
| FITTING, GROOVED                                  | Grooved ductile Iron Fittings for Grooved end Pipes, 4" through 24"   | Grinnell<br>TylerG-B<br>Vitaualic  |

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| FITTING,<br>PIPE RESTRAINT  | May be used with or in lieu of thrust blocks with approval of District Engineer   | Romac-GripRing<br>Star Pipe-PVC Ring Lock Series 3500<br>UniFlange - 1300-C                |
| GASKET  | 1/8" Thick Full Face or Ring, Aramid Fiber Bound with Nitrile. No Asbestos Content  | Calpico<br>Garlock 3000<br>Johns-Manville<br>Klinger 4401<br>Tripac 5000                   |
| GASKET, JOINT<br>RESTRAINT  | Rubber Ring Type with Stainless Steel Locking Segments Vulcanized into the Gasket. For use on PVC Carrier and Casing Pipes.   | US Pipe Field Lok 350  |
| GASKET, RUBBER<br>GASOLINE RESISTANT  | Gasoline Resistant Pipe Gaskets for Water Mains   | Newby  |
| GASKET, RUBBER<br>RING  | 3mm (1/8") Thick, Rubber Ring Type, 1.72 Mpa (250 PSI) Maximum. For 100mm (4") through 900mm (36") Pipe Flanges   | Calpico<br>Johns-Manville<br>US Pipe   |
| GREASE  | For Bolt Corrosion Protection on Buried Bolts, NO-OX-ID Type  | Sanchem NO-OX-ID<br>Dearborn Chemical  |
| GROUT   | Non-Shrink Cement Based Construction Grout for Crack Repair, Flooring Mortar, Dowel Grouting, Crack Sealing and General Binding   | Sika SikagROUT 212<br>STO Epoxy Binder CR633<br>STO Epoxy Gel CR635<br>STO N-S Grout CR732 |
| JOINT RESTRAINT<br>ASSEMBLY   | Only where Concrete Thrust Restraint is not possible. Prior approval of District Engineer is required   |  |
| JOINT SEALING<br>COMPOUND, PLASTIC<br>ROPE  | For use on Pre-cast Vault and Manhole in Grooved Joints between sections  | Quickset Joint Sealing<br>Compound   |
| LUBRICANT, PIPE<br>GASKET   | Rubber Gasket Pipe Lubricant for use on PVC or ductile Iron Pipe Joints, NSF Listing required.  | Whitlam Blue Lube  |
| METER   | Supplied by CMWD  |  |
| METER BOX<br>1" SERVICE   | 12" x 20" x 12" Polymer Meter Box and Cover for 1" Water Services with meters 1" or smaller.<br>Cover color:<br>Gray for Potable Water Use<br>Purple Lids for Recycled Water Use                              | Amorcast A6000485<br>Cover A6000484<br>Lid, Drop In A6000487                               |
| METER BOX<br>2" SERVICE   | 17" x 30" x 12" Polymer Meter box with 2-Piece Lid for 2" Water Services with meter larger than 1" and Blowoff Assemblies<br>Cover Color:<br>Gray for Potable Water Use<br>Purple Lids for Recycled Water Use | Amorcast A6001640PC-12<br>Cover A6001643<br>Lid, Drop In A6000482                          |
| METER BOX<br>1" SERVICE<br>( Exposed to Traffic<br>Loads)   | Gray for Potable Water Use<br>Purple Lids for Recycled Water Use  | Brooks Model No.37 with Traffic Rated<br>Lid   |
| METER BOX<br>2" SERVICE<br>(Exposed to Traffic Loads<br>& for Combination Air<br>Release, Std Dwg W7) | Gray for Potable Water Use<br>Purple Lids for Recycled Water Use  | Brooks Model No.66 with Traffic Rated<br>Lid   |
| METER FLANGE  | Bronze Meter Flanges for 1-1/2" and 2" Meters with Slotted Holes  | Ford CF Series<br>Jones J129<br>A.Y.McDonald 610F  |
| MORTAR, REPAIR  | Two Component, Low Shrinkage, Cement Based with High Compressive and Bonding Strength   | Sika Sika Top 122, 123<br>STO CR 735, CR 740   |
| PAINT   | Valve Box Lids<br>Prime Coat required on all above ground metal surfaces  | Frazee Traffic Line and Marking Paint<br>Yellow #5020301 (2 coats)                         |
| PAINT   | Fire Hydrants<br>Prime Coat required on all above ground metal surfaces   | Frazee Aero Plate II, Bright Yellow<br>#6480462 (2 coats)                                  |
| PAINT   | Backflow Assys & Vent Pipes, Prime Coat required on all above ground metal surfaces   | Rust-Oleum No 7671 Dunes Tan (2 coats)   |

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|--|---|---|
| PAINT, PRIME COAT                                  | Prime Coat, Prime Coat required on all above ground metal surfaces  | Rust-Oleum No 769 Damp Proof Red or<br>Rust-Oleum No 865 Enamel-Dunes Tan                         |
| PIPE, COPPER TUBING                                | 1" Type K Soft Seamless rolled Tubing<br><br>2" Type K Soft Seamless Straight Lengths<br><br>1" and 2" Type K Rigid Seamless Straight Lengths   | Cerro<br>Halstead<br>Lee<br>Mueller<br>Phelps-Dodge   |
| PIPE, DUCTILE IRON                                 | For Water Lines 100mm (4") and larger manufactured per AWWA C111 C115, C150, C151.<br>Double Cement Mortar Lined  | American Pipe<br>Griffin<br>Pacific States<br>U.S. Pipe   |
| PIPE, PVC C900                                     | For Water Lines 4" through 12" and 8" Gate Wells. AWWA C900 Class 200 only.   | Certainteed<br>Diamond Plastics<br>Extrusion Technologies<br>IPEX<br>Pacific Western<br>VinylTech |
| PIPE, PVC C905                                     | For Water Lines 16" and 20" through 36". AWWA C905 DR 25 and DR 18  | Certainteed<br>Extrusion Technologies<br>IPEX<br>J-M<br>Pacific Western<br>Vinyltech              |
| PIPE, STEEL CEMENT MORTAR LINED AND COATED (CML+C) | Steel Cylinder (CML/C), Per AWWA M11 and Section 15061. 1/4" Minimum Wall Thickness.<br>Steel Pipes Used for Recycled Water Installation are to be identified per District requirements. Submittal required.      |   |
| PLASTIC ENCASEMENT                                 | 12-mil Thick Polyethylene Encasement Sleeve for Ductile Iron Pipe (DIP) per AWWA C105 and Recycled PVC, CMC/L, or DIP Non-Purple Water Pipe.<br>Clear Sleeve for Potable Water<br>Purple Color for Recycled Water |   |
| PLASTIC WRAP                                       | 8-mil Thick Polyethylene Encasement for Buried Fittings and Valves -- Double Wrap<br>Clear Sleeve for Potable Water<br>Purple Color for Recycled Water  |   |
| PRIMER, WAX TAPE                                   | Surface Primer for Underground Application of Petrolatum Wax Tape   | Carboline Denso Paste<br>Trenton Tem-Coat   |
| PROTECTOR POST, STEEL                              | 4" Diameter, 0.250" Wall Galvanized A-120 Steel Pipe, Concrete Filled   |   |
| SEALANT  | Chemical Grout for Joint Sealing  | 3M Scotch Seal  |
| SERVICE SADDLE FOR ACP AND DI PIPE                 | Cast Brass ASTM B62 Body with Silicone Bronze Double Straps, IP Outlet Sizes 25mm (1") and 50mm (2")  | Ford 202B<br>Jones J-979<br>Smith-Blair 323<br>Romac 202B<br>Mueller BR2B                         |
| SERVICE SADDLE FOR PVC C900 PIPE                   | Bronze or Brass Saddle with Stainless Steel Four Bolt Strap(s), IP Thread Outlet for Sizes 1" and 2" for Pipe Sizes 4" through 12"  | Ford202BS<br>Jones J-969<br>Smith-Blair 393<br>Romac 202BS<br>Mueller BR2S                        |
| SERVICE SADDLE FOR PVC C905 PIPE                   | Bronze or Brass Saddle with Stainless Steel Four Bolt Strap(s), IP Thread Outlet for Sizes 1" and 2" for Pipe Sizes 16" and Larger.   | Ford 202BS<br>Jones J-969<br>Romac 202B<br>Mueller BR2S   |
| TAG, BRASS IDENTIFICATION                          | 1" Diameter, 18 Gauge Brass with 3/16" Die Stamped Letters and Numbers, Suitable for Attachment to Cathodic Protection Wires by means of a Nylon Zip Tie.   | Ford 202BS<br>Jones J-969<br>Romac 202N   |
| TAPE, OUTER WRAP                                   | Adhesive Plastic Outer Wrap for Wax Petrolatum Tape in Underground Applications   | Polyken 960<br>Trenton Polyply  |

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|--|--|---|
| TAPE, UTILITY  | 10 to 50 Mil x 2" Wide General Utility Tape for Corrosion Protection of Above and Below Ground Pipes and Fittings  | Calpico<br>Northtown<br>Polyken 900<br>Scotchwrap<br>3M 50, 51  |
| TAPE, WARNING/<br>IDENTIFICATION                           | 6" Wide, Warning/Identification (Non-Metallic) Marking Tape for Buried Facilities with Continuous Warning "Caution Water Main Buried Below" or "Caution Recycled Water Main Buried Below" Tape for Recycled Water shall be Purple  | Calpico, Type 1<br>Line-Tec, Type B<br>T.Christy Eng., Type 1<br>Terra Tape, Standard 250<br>Thor, Elast Tec<br>Northtown   |
| TAPE WARNING/<br>IDENTIFICATION FOR<br>RECYCLED IRRIGATION | 3" Wide, Warning/Identification (Non-Metallic) Marking Tape for Buried Irrigation Pipelines. Purple Color with Continuous warning "Caution Reclaimed Water Main Buried Below"  | Calpico, Type 1<br>Line-Tec, Type B<br>T.Christy Eng., Type 1<br>Terra Tape, Standard 250<br>Thor, Elast Tec<br>Northtown   |
| TAPE, WAX<br>ABOVEGROUND                                   | Petrolatum Saturated Synthetic Fabric Tape for use on Aboveground Couplings, Flanges, Fittings, etc.   | Trenton #1 Wax-Tape   |
| TAPE, WAX<br>UNDERGROUND                                   | Petrolatum Saturated Synthetic Fabric Tape for use on Underground Couplings, Flanges, Fittings, etc. Primer and Outer Wrap Required.   | Carboline Densyl Tape<br>Trenton #2 Wax-Tape  |
| TAPPING SLEEVE FOR<br>ACP, AND DIP                         | Fabricated Steel Tapping Sleeve for 4" through 12" Wet Taps. Epoxy Coated with Stainless Steel Bolts and Nuts  | Baker 428 Series<br>Ford FTSC<br>Romac FTS-420<br>Smith-Blair 622   |
| TAPPING SLEEVE FOR<br>PVC (C900 -C905)                     | Fabricated Steel Tapping Sleeve for 4" through 12" Wet Taps. Epoxy Coated with Stainless Steel Bolts and Nuts  | Ford 'FAST' W/S.S. FLANGE<br>Romac SST W/S.S. FLANGE<br>Mueller H304 w/S.S. FLANGE  |
| VALVE STEM<br>EXTENSION,<br>FIBERGLASS                     | Three Part Fiberglass Valve Extension Kit. Use when extension 8 foot or shorter.   | Pipeline Products FPU-210,<br>FPT-200, FPL-220  |
| VALVE STEM<br>EXTENSION, STEEL                             | Round or Square 1-1/2" Diameter Steel Rod, Welded Construction, Hot Dipped galvanized with Top Centering Ring and AWWA 2" Operating Nuts Top and bottom. Use when extension longer than 8 foot.  | Pipeline Products SX-900<br>South Bay Foundry E4160   |
| VALVE, BALL WITH<br>LOCKING TABS                           | 3/4"Bronze, Straight, FIP x Meter Swivel with Locking Tabs and Purple Handle   | 1" Ford B13-444w<br>1" Jones J1908<br>2" Ford BF13-777W<br>2" Jones J1913   |
| VALVE, BUTTERFLY<br>150 PSI                                | 18" and Larger, AWWA C504, Class B. Thermosetting or Fusion Bonded Epoxy coated and Lined. Class D or E Flange x Flange Ends   | M&H 1450, 4500<br>Mueller Linesseal III<br>Pratt Groundhog  |
| VALVE, BUTTERFLY<br>250 PSI                                | 18" and Larger, AWWA C504, Class B. Thermosetting or Fusion Bonded Epoxy coated and Lined. Class D or E Flange x Flange Ends   | M&H 1450, 4500 (Class 250)<br>Mueller Linesseal XP 250<br>Pratt Triton HP-250   |
| VALVE, GATE,<br>RESILIENT WEDGE<br>(RWGV)                  | 4" through 16", non-rising Low Zinc Bronze or Stainless Steel Stern, Ductile Body and Bonnet, encapsulated Wedge per AWWA C509 or C515 with Epoxy Coated Interior. Manufactured to AWWA C509 or C515, with 250 PSI Rating<br><br>*Ductile Iron Bodies and Bonnets are required | American FC, Series 2500<br>AVK 25<br>Clow F6100, F6100 Ductile<br>Kennedy Ken-Seal ii, KRSR<br>Mueller 2361<br>M&H 4067, 7067, A2361<br>U.S. Pipe Metroseal &<br>Metroseal 250 |
| VALVE, PRESSURE<br>RELIEF AND<br>SUSTAINING                |  | Cla-Val   |

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| VALVE, HANDLE BALL, 150 PSI     | 3/4" Through 2", Used as part of meter assembly and provided by CMWD  | Jones 3/4" J-1098<br>Jones 1" J-1908, 2" J-1913<br>Ford 3/4" B13-332W<br>Ford 1" B13-444W<br>Ford 2" B13-777W |
| VALVE BOX RECYCLED WATER VALVES | Lid to be marked "Recycled Water", See Standard Dwg W13   | South Bay Foundary SBF 1208-N   |
| VALVE BOX                       | For Gate Valves & Butterfly Valves, See Standard Dwg W13, Lids shall be marked "Water"  | Brooks Service 4TT J&R 4T   |
| VALVE BOX                       | Normally Close Valve, Lids shall be marked "Water"  | Brooks Service 3RT  |
| VALVE BOX                       | 1" Blow Off or Manual Air Releases. See Standard Dwg W5, Lids shall be marked "Water"   | Brooks Service 4TT J&R 4T   |
| VALVE BOX                       | 2" Blow Off or Manual Air Release. See Standard Dwg W6 Lids shall be marked "Water"   | South Bay Foundary SBF 1243   |
| VALVE BOX                       | 4" Blow Off Assembly. See Standard Dwg W11  | South Bay Foundary SBF 1243 (for 4" Pipe Outlet) and Brooks 4TT or J&R 4T (for Valve)                         |
| VALVE BOX                       | Air-Vacuum Valve Assembly. See Standard Dwg W7<br>Valve Boxes Located in traffic shall use approved manufacturer's Traffic Rated Lids | Amorcast A600 1640 PC-12 w/#60001643*Service 5 Cover<br>Brooks 66 (2-piece lid)<br>J&R No W6B (2-piece lid)   |